

CLAIMS

1. A golf club shaft comprising:
at least one tubular section; and
a unitary insert attached to said at least one tubular section for regulating the flex point of said shaft, said insert being shorter than said tubular section and having a central section and a pair of couplers integrally formed on opposite ends of said central section, at least one of said couplers being attached to an end of said tubular section of the shaft and the central section extending axially outwardly away from the end of said tubular section, said insert being at least as rigid as said tubular section.
2. The shaft of claim 1 being further defined by two tubular sections,
a first lower tubular section forming a tip end of said shaft for attachment to the golf club head and an upper tubular section forming a butt end for attachment of a grip; wherein one of said couplers is attached to said lower section and the other said coupler is attached to said upper section.
3. The shaft of claim 2 wherein said couplers are female connectors.
4. The shaft of claim 3 wherein said couplers are male shank connectors.

5. The shaft of claim 3 wherein said couplers include one male shank connector and one female connector.

6. The shaft of claim 2 wherein a grip is attached to said upper section and said insert is located within 5 inches of said grip.

7. The shaft of claim 6 wherein a grip is attached to said upper section and said insert is located within 2 inches of said grip.

8. The shaft of claim 1 wherein said central coil is formed in a series of annular rings.

9. The shaft of claim 1 wherein one of said couplers is connectable directly to the golf club head.

10. The shaft of claim 1 wherein said central section of the insert includes a plurality of helically shaped coils.

11. The shaft of claim 10 wherein said plurality of coils are surface coils formed on the surface of said central section.

12. The shaft of claim 10 wherein said plurality of coils are formed by a continuous elongated member, forming a spring-like element.

13. The shaft of claim 1 wherein said insert is made from titanium.

14. The shaft of claim 13 wherein said central section includes a plurality of helically shaped coils.

15. The shaft of claim 14 wherein said central section includes no more than 5 coils.

16. The shaft of claim 15 wherein said insert includes a hollow central bore extending along its length.

17. The shaft of claim 16 wherein said central section is no more than 1.00 inches long and said couplers are no more than 1.5 inches long.

18. The shaft of claim 1 wherein said insert includes a means for absorbing shock and cushioning vibration when a shot is executed.

19. The shaft of claim 1 wherein said insert includes a means for controlled turning about its axis in response to the torque developed by the club as it is swung.

20. The shaft of claim 1 wherein said insert includes a means for absorbing shock and cushioning vibration when a shot is executed, and for controlling turning about its axis in response to the torque developed by the shaft as it is swung.

21. The shaft of claim 1 wherein said insert includes physical alterations that allow the insert to twist or turn slightly about its axis when the club head is swung.

22. The shaft of claim 1 wherein said insert is more rigid than said tubular section of the shaft.

23. The shaft of claim 1 wherein said insert includes physical alterations in its configuration which allow the insert to absorb shock and cushion vibration when a shot is executed.

24. The shaft of claim 23 wherein said physical alterations include a hollow, central bore throughout the length of said insert.

25. The shaft of claim 23 wherein said physical configurations comprise a coil structure formed on the surface of at least a portion of said insert.

26. The shaft of claim 25 wherein said insert is more rigid than said tubular section of the shaft.

27. The shaft of claim 25 wherein said coils are in the form of an arcuate bead formed on the surface of at least the central portion of said insert.

28. A golf club shaft comprising:

at least one tubular section; and

a unitary insert attached to said at least one tubular section for regulating the flex point of said shaft; said insert being shorter than said tubular section and having a central section and a pair of couplers integrally formed on opposite ends of said central section, at least one of said couplers being attached to an end of said tubular section of the shaft and the central section extending axially outwardly away from the end of said tubular section, said insert including physical alterations that allow the insert to twist or turn slightly about its axis when the club head is swung.

29. The golf club of claim 28 wherein said insert is attached to the club head at one end and to the shaft at the other end.

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30. A golf club comprising:
- a golf club head;
- a shaft having upper and lower tubular sections, one tubular section connected to the golf club head and the other tubular section connected to a grip; and
- means for regulating the swing weight, flex point, and stiffness of the club, said means including a unitary insert having a central section and a pair of couplers integrally formed on opposite ends of said central section, one coupler attached to the upper tubular section of the shaft and the other coupler attached to the lower tubular section of the shaft, said insert being at least as rigid as said tubular sections.
31. The golf club of claim 30 wherein said insert includes a means for controlling turning about its axis in response to the torque developed by the club as it is swung.
32. The golf club of claim 30 wherein said insert is located within 3 inches of the club head.
33. The golf club of claim 30 wherein said insert is located in the upper half of the shaft.
34. The golf club of claim 30 wherein said insert is located in the upper third of the shaft.
35. The golf club of claim 30 wherein said insert is located adjacent the grip of said clubs.

36. The golf club of claim 30 wherein said central section of said insert includes a plurality of coils.

37. The golf club of claim 30 wherein said insert is configured to absorb shock.

38. The golf club of claim 30 wherein said insert has physical alterations along at least a portion of its surface, said alterations suppressing vibration along the shaft.

39. The golf club of claim 38 wherein said insert includes a bore throughout its length to enhance the vibration-suppression of the insert.

40. The golf club of claim 39 wherein said insert is more rigid than the shaft.

41. The golf club of claim 30 wherein said insert is shorter than said tubular section and the central section of said insert extends outwardly away from opposite ends of said tubular sections.

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42. A golf club shaft having a distal end and butt end, comprising:
a tubular section including a first end located at the butt end of the golf club shaft and a
second end positioned slightly short of the distal end of the golf club shaft;
an insert secured to the second end of the first member, the insert extends from the second
end of the tubular section to the distal end of the golf club shaft and includes a first end securely
coupled to the second end of the first member and a second end which is ultimately secured to
a golf club head;
the insert being formed from a vibration absorbing material which absorbs undesirable
vibrations resulting from an individual striking a golf ball.
43. The golf club shaft according to claim 42, wherein the tubular section is made from a
material chosen from the group consisting of steel, graphite and fiberglass.
44. The golf club shaft according to claim 42, wherein the insert is made from a lexan or
fiberglass composite.
45. The golf club shaft according to claim 42, wherein the insert is made from titanium.
46. The golf club shaft according to claim 42, wherein the insert includes a central section and
a pair of couplers formed on opposite ends of the central section, the central section being
approximately 0.5 inches in length.

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47. A golf club shaft having a distal end and butt end, comprising:
a tubular section including a first end located at the butt end of the golf club shaft and a
second end positioned slightly short of the distal end of the golf club shaft;
an insert secured to the second end of the first member, the insert extends from the second
end of the tubular section to the distal end of the golf club shaft and includes a first end securely
coupled to the second end of the first member and a second end which is ultimately secured to
a golf club head;
the insert being formed from a material controlling the stiffness at the distal end of the golf
club shaft upon striking a golf ball to thereby stabilize a golf club head secured to the distal end
of the golf club shaft.
48. The golf club shaft according to claim 42, wherein the tubular section is made from a
material chosen from the group consisting of steel graphite and fiberglass.
49. The golf club shaft according to claim 42, wherein the insert is made from a lexan or
fiberglass composite.
50. The golf club shaft according to claim 42, wherein the insert is made from titanium.
51. The golf club shaft according to claim 42, wherein the insert includes a central section and
a pair of couplers formed on opposite ends of the central section, the central section being
approximately 0.5 inches in length.

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